PASSAGE III

HUMANITIES: *Colorful Reflections on Fairfield Porter*

My first encounter with the international artist and art critic Fairfield Porter was actually through the poetry of his wife, Anne (Channing) Porter. While both grew to become quite celebrated in their crafts, Fairfield's story is unique.

Born into an affluent, artistic family in 1907, the boy who was to one day become a renowned artist and respected art critic showed a comparative lack of artistic ability when seen next to his siblings. While his older brother Eliot took to photography, Fairfield Porter, despite being remarkably intelligent, appeared to be lacking any natural artistic talents. It seemed that, although a member of a family full of artists, his true skill lay in the critiquing of others' artistry. This was evidenced in his second year at Harvard by Fairfield's decision to pursue art history as his major field of study. After studying at Harvard under Arthur Pope and then traveling briefly through Europe, Fairfield came back to the United States to further his education at the Art Students League in New York City. There he became acquainted with the famed photographer Alfred Stieglitz—the work of whom is said to have positively influenced Fairfield's paintings to some degree.

Between the years 1931 and 1932, Fairfield spent the majority of his time in Italy learning to appreciate and critique the works of the great Renaissance painters. His training came from both direct study under world-famous art historian Bernard Berenson, and from countless hours spent in museums and galleries observing the greatest pieces of Italian art.

Following his marriage to Anne upon his return from Italy, Fairfield spent the better part of the next two decades developing his skills as a painter while caring for his autistic son. During this period his meetings with the French Intimist painter Willem De Kooning would prove to have a profound effect on his later works. Porter was the first to publicly acclaim the work of Kooning.

In fact, what made Porter so famous was his knack for responding directly to an artist's work. He found fault with the common "talk based" criticism that spoke to art only in reference to its past or to some vague theoretical framework; such criticism attempted to shape the future of art and was far too biased for Porter. His time as an art critic for such publications as *Art News* and *The Nation* ended, however, in 1961 when he decided to pursue a full-time painting career.

The other side of his fame, his uncommon approach to painting, is just as important to the understanding of Fairfield Porter's contributions to the world of art. His personal philosophy comes from a blending of two views; art should be personal, emotional, and representative of its subject, while at the same time be boldly colorful, expressive, and generally abstract. Drawing on his vast knowledge of art history, especially the styles of French Intimism, Porter fused these two feelings to create a powerful, emotive collection of paintings about families, individuals, and the home, as well as moving nature scenes such as *The Door to the Woods* (1971) and *Maine – Toward the Harbor* (1967).

When he died in 1975, on a morning walk along the ocean, he left the world as one of the most respected art critics in the past century. On top of that, his work as a painter is still viewed within the art community as amazingly distinctive and especially representative of his life. It is sad to say that now, however, some thirty years after his death, he is still virtually unknown outside of art circles. This remarkably insightful, articulate, creative individual needs to be discovered by the common man and revered for his continuing influence on the artists of today. The words of this intellectual were some of the best and most honest critiques of art ever spoken.

21. The main purpose of the passage can best be described as an attempt to:

- **A.** explain Porter's renowned ability to candidly address artists' works.
- **B.** illustrate the influence several renowned artists had on the works of Porter.
- **C.** appraise Porter's unusual methods of painting and critiquing artwork.
- **D.** chronicle Porter's life, particularly the events and beliefs that shaped his career.

22. The author's attitude towards the subject of the passage can best be characterized as:

- **F.** detached interest.
- **G.** amused tolerance.
- **H.** warm appreciation.
- **J.** deep abhorrence.

23. As described in the passage, Porter's method of criticizing art can best be summarized by which of the following statements?

- **A.** Porter's criticisms were frank and forthright, and were based solely on his evaluation of the piece of art that he was appraising.
- **B.** Porter criticized art based on the context of the painting and conceptual structures that he found most useful in his evaluations.
- **C.** Porter's critiques were comparable to those of Bernard Berenson, who greatly influenced Porter's outlook on art.
- **D.** Porter targeted his criticisms at helping artists by attempting to influence their forthcoming works.

24. Porter's painting style can be described by all of the following EXCEPT:

- **F.** stirring.
- **G.** vivid.
- **H.** trite.
- **J.** individualistic.

25. Without the first paragraph, the passage would lose:
- **A.** an overview of the passage as a whole.
- **B.** a brief introduction and transition into the topic.
- **C.** important detail that later becomes relevant to the passage.
- **D.** an explanation of the logic behind the author's viewpoint.

26. In line 11, the statement "despite being remarkably intelligent" is intended to:
- **F.** call attention to the fact that although Porter was a well-respected art critic, he failed to impress his college professors.
- **G.** communicate to the reader that Porter's lack of a formal education did not detract from his ability to critique art.
- **H.** emphasize to the reader that Porter's high level of intelligence was not related to his artistic ability.
- **J.** inform the reader that Porter's position as an art critic was so difficult that it challenged his intellect.

27. The word *revered* in line 71 most nearly means:
- **A.** trusted.
- **B.** depreciated.
- **C.** reminiscent.
- **D.** honored.

28. According to the passage, when did Fairfield Porter become serious about becoming an artist?
- **F.** Immediately upon his return from Italy.
- **G.** While he was studying at the Art Students League.
- **H.** Just before his death in 1975.
- **J.** Approximately thirty years after he returned from Italy.

29. The third paragraph states that, during 1931 and 1932, Fairfield Porter was:
- **A.** continuing his training as an art critic.
- **B.** the greatest art critic in Italy.
- **C.** planning his marriage to Anne Channing.
- **D.** training to become a Renaissance painter.

30. The author uses the phrase "other side of his fame" (line 48) most likely in order to:
- **F.** suggest that Fairfield Porter was better known as an artist than as an art critic.
- **G.** indicate that Fairfield Porter was both a renowned art critic and painter.
- **H.** show that Fairfield Porter was not aware of his popularity as a painter.
- **J.** suggest that other art critics of the time were more famous than was Fairfield Porter.

PASSAGE IV

NATURAL SCIENCE: *This passage discusses some of the controversy surrounding the existence of dark matter in the universe.*

Dark matter in the universe is believed by some scientists to be a substance that is not readily observable because it does not directly refract light or energy. Its existence can only be deduced because of the effect that it has on surrounding matter. In fact, some members of the scientific community have argued that dark matter does not actually exist. Others, however, believe in its existence, in part because the scientific community does not have a complete understanding of gravitational science. On the other hand, some would argue that it is the understanding of gravitational science that leads most scientists to believe in the existence of dark matter, because without dark matter, there are many cosmological phenomena that are difficult to explain.

For example, dark matter in the universe may have a peculiar effect on the Milky Way galaxy. Some scientists believe that the interaction between dark matter and other smaller, nearby galaxies is causing the Milky Way galaxy to take on a warped profile. It has been asserted that not only does dark matter exist, it may also be responsible for the Milky Way's unusual shape. The interaction referenced involves two smaller galaxies near the Milky Way, called Magellanic clouds, moving through an enormous amount of dark matter, which, in effect, enhances the gravitational pull that the two Magellanic clouds could have on the Milky Way and other surrounding bodies. Without the existence of the dark matter, the Magellanic clouds would not have sufficient mass to have such a strong effect on the bend of the Milky Way galaxy.

The strongest evidence for the validity of this hypothesis rests in Newtonian physics, and the hypothesis that anything with mass will exert a gravitational pull. The Milky Way and other galaxies with peculiar warped shapes are being molded by a gravitational force. However, there is nothing readily observable with sufficient mass that could cause such a high level of distortion via gravitational pull in the vicinity of the Milky Way. Therefore, something that is not easily observed must be exerting the necessary force to create the warped shape of the galaxy.

Aaron Romanowsky and several colleagues have questioned the effect that dark matter might have on galaxies. They point to the existence of several elliptical galaxies surrounded by very little dark matter as evidence that dark matter is not, in fact, the cause of the warped galaxies. While they do not claim that their findings should be interpreted to conclude that dark matter does not exist, they apparently believe that the results of their studies cast doubt on some of the conventional theories of galaxy formation and manipulation.

Several models constructed by researchers from the University of California at Berkeley, however, point to the idea that dark matter is the most likely explanation for the distorted shape of the Milky Way and other galaxies. Using computer models, they have mapped the likely interactions between certain galaxies and the surrounding dark matter, and those models have shown not only the possibility that dark matter is responsible for the warped shape of the Milky Way, but that the relationship between the dark matter and the Magellanic clouds is dynamic; the movement of the clouds through the dark matter seems to create a wake that enhances their gravitational influence on the Milky Way.

31. As it is used in line 14, the term *phenomena* most nearly means:

- **A.** occurrences.
- **B.** problems.
- **C.** attitudes.
- **D.** surprises.

32. The passage states that some members of the scientific community are reluctant to believe in the existence of dark matter because:

- **F.** there is absolutely no evidence for the existence of dark matter.
- **G.** no one understands how to apply gravitational science.
- **H.** dark matter cannot be directly observed.
- **J.** dark matter has little effect on surrounding matter.

33. What does the passage offer as evidence for the existence of dark matter?

- **A.** A complete understanding of gravitational science.
- **B.** The enormous mass of Magellanic clouds.
- **C.** The shape of the Milky Way galaxy.
- **D.** A photograph taken with the aid of a refracting telescope.

34. According to the passage, what is Aaron Romanowsky's theory regarding dark matter?

- **F.** It cannot be conclusively proven that dark matter affects the shape and formation of galaxies.
- **G.** The discovery of certain galaxies disproves the theory that dark matter exists in the universe.
- **H.** Computer models suggest that dark matter is responsible for warped galaxies.
- **J.** Dark matter has not effect at all on the shape of a galaxy.

35. The last paragraph supports the general hypothesis provided earlier in the passage that:

A. the effect of Magellanic clouds on galaxies is enhanced by dark matter.
B. computer models are necessary for an understanding of gravitational science.
C. dark matter has little to no effect on the formation of certain cosmological phenomena.
D. the shape of the Milky Way galaxy can be deduced by observing the matter surrounding it.

36. The main purpose of the third paragraph is to point out that:

F. dark matter was first discovered by applying Newtonian physics.
G. different viewpoints exist regarding gravitational science.
H. galaxies with peculiar shapes could not exist in the presence of dark matter.
J. scientific theories provide support for the existence of dark matter in the universe.

37. The word *conventional* in line 51 most nearly means:

A. easily understood.
B. formally disputed.
C. strictly interpreted.
D. generally accepted.

38. Which one of the following is NOT mentioned in the passage as a scientific theory regarding dark matter?

F. The existence of dark matter cannot be proved by direct observation.
G. Dark matter may be responsible for the shape of the Milky Way.
H. It is certain that dark matter has no influence on surrounding celestial bodies.
J. Magellanic clouds require the presence of dark matter in order to influence the shape of galaxies.

39. According to the passage, dark matter cannot be readily detected because:

A. dark matter does not actually exist.
B. most of the dark matter in the universe is hidden behind galaxies.
C. it does not directly interact with light or energy.
D. it has no effect on the surrounding matter.

40. The passage supports which of the following statements about dark matter?

F. Its existence is inferred by some researchers based on observations of cosmological bodies composed of ordinary matter.
G. Its existence has been conclusively proven by computer models.
H. If it does not exist, the universe is largely empty.
J. Its presence is readily observable to researchers who completely understand how to apply gravitational science.

1) The daily double at most racetracks consists of selecting the winning horse in both the first and the second race. If the first race has 7 entries and the second has 8 entries, how many daily double tickets mush you purchase to guarantee a win?

3) A lock combination consists of three numbers between 0 and 24 inclusive. How many combinations are possible, assume repetition is allowed?

5) A social security number consists of nine digits. How many different social security numbers are possible if repetition of digits is NOT permitted?

7) A class ring has three stone options (emerald, ruby or sapphire), two metal options (gold and silver). How many different class rings are possible?

9) How many different sandwiches can be made with 2 choices of bread, 3 choices of toppings and 2 choices of meat?

11) A batting order must be created from the 9 starters on a baseball team. How many batting orders are possible if the pitcher must bat last?

13) A batting order must be created from the 9 starters on a baseball team. How many batting orders are possible if the first 4 batters are already assigned?

15) A multiple choice test has 5 questions and each question has 4 choices. How many ways are there to answer the questions if you know the answer to the first question?

Homework 17 – 20: an identification code is to consist of two letters followed by 4 digits. How many different codes are possible if

17) Repetition is permitted

19) Repetition of numbers is permitted, but repetition of letters is not permitted?

Homework #21-24: a license plate is to consist of three digits followed by two uppercase letters. Determine the number of different license plates possible if

21) Repetition of numbers and letters is not permitted

23) The first digit cannot be a zero, and repetition is not permitted

25) How many ways can the letters of Mississippi be arranged?

27) How many ways can the letters x,x,x,y,y,z,z,z,z be arranged?

29) How many ways can the letters of abracadabra be arranged?

State if each scenario involves a permutation or a combination.

1) A team of 8 basketball players needs to choose a captain and co-captain.

3) The batting order for seven players on a 12 person team.

State if each scenario involves a permutation or a combination. Then find the number of possibilities.

5) Castel and Joe are planning trips to three countries this year. There are 7 countries they would like to visit. One trip will be one week long, another two days, and the other two weeks.

7) You are setting the combination on a three-digit lock. You want to use the numbers 123 but don't care what order they are in.

9) A team of 17 softball players needs to choose three players to refill the water cooler.

11) The student body of 10 students wants to elect a president, vice president, secretary, and treasurer.

1. Alex, Bea, Cindy, and Dave are cleaning a storage room. If they take turns working in teams of 2, how many different teams can they make?

   A. 4
   B. 6
   C. 8
   D. 12

3. Sam is baking a three-layer cake. She has three choices for each layer -- red, yellow, and blue -- and each layer must be a different color. How many different ways are there to layer the cake?

   A. 3
   B. 6
   C. 9
   D. 27

5. Ashton's wardrobe consists of 10 different shirts and 4 different pairs of pants. How many different outfits consisting of one shirt and one pair of pants can he make from his wardrobe?

   A. 14
   B. 20
   C. 40
   D. 60

7. Chet must create a code for his locker. It must be 3 characters long. For each character, he may choose from all ten digits (0-9), and he may repeat digits. How many different codes can he create?

   A. 30
   B. 720
   C. 729
   D. 1,000

9. A deli offers 3 kinds of bread, 4 kinds of deli meat, and 3 types of cheese. How many different sandwiches can be made from 1 type of bread, 1 type of meat, and 1 type of cheese?

   A. 3
   B. 10
   C. 12
   D. 36

11. Ephram is ordering a custom license plate. It must be 6 characters long. For each of the first three characters, he may choose any letter A through Z, and for each of the last three characters, he may choose any digit 0 through 9. How many different license plates can Ephram choose from?

A. $26^3 \times 10^3$
B. $26^3 + 10^3$
C. $26 \times 3 \times 10 \times 3$
D. $26^3 \times 26^3 \times 26^3 \times 10^3 \times 10^3 \times 10^3$

13. Five swimmers (Al, Bob, Chet, Dave, and Ed) are competing for the gold, silver, and bronze medals. In how many different ways can they place?

A. 15
B. 60
C. 120
D. 125

15. Qurashi is ordering a custom license plate. It must be 6 characters long. For each of the first three characters he may choose any letter A through Z and for each of the last three characters he may choose any digit 0 through 9, but no letter or digit can be repeated. How many different license plates can Qurashi choose from?

A. $26^3 \times 10^3$
B. $26 \times 3 \times 10 \times 3$
C. $26 + 25 + 24 + 10 + 9 + 8$
D. $26 \times 25 \times 24 \times 10 \times 9 \times 8$

Grid-In Questions (Open-Ended Questions)

17. A deli offers 3 kinds of bread, 5 kinds of meat, and 3 kinds of condiments. If a sandwich is made from one type of bread, one type of meat and one condiment, how many different sandwiches are possible?

19. Simone has 3 shirts (red, yellow and blue), 3 skirts (red, yellow and blue), and 3 belts (red, yellow and blue). How many different outfits can she create, if she doesn't want all three items to be the same color?

PRACTICE EXERCISES

1. A 'combination' lock has a dial bearing the numbers 1 through 16. How many different 3-number 'combinations' are possible if there are no restrictions on the 3 numbers (example: 16-5-4, 5-16-4, 3-3-12 are three different, valid 'combinations').

A. 48 B. 4096 C. 3360 D. 256

3. A seven-question quiz has four true/false questions followed by 3 multiple choice questions. For each multiple choice question there are four possible answers. In how many different ways is it possible to answer the seven questions?

A. 12 B. 80 C. 28 D. 1024

5. When Euclid dresses up for goth night, he has to choose a cloak, a shade of dark lipstick, and a pair of boots. He has two cloaks, 6 shades of dark lipstick, and 3 pairs of boots. How many different combinations are possible?

A. 15 B. 24 C. 11 D. 36

7. Socrates, Euclid, Plato, Aristotle, Diogenes, and Democritus are going to choose from amongst themselves one person to wax the floor and another person to scrub the toilet. How many different outcomes are possible if Diogenes will not scrub the toilet?
A. 36 B. 720 C. 30 D. 25

9. When Diogenes the used-car salesman gets dressed for work, he has to choose a jacket, shirt, tie, belt, trousers and shoes. He has a plaid jacket, a checkered jacket, and a pink jacket; a white long-sleeved shirt, a white short-sleeved shirt, a green short-sleeved shirt and a yellow long-sleeved shirt; a striped tie, a polka-dotted tie, a checkered tie, and a solid orange tie; a white patent-leather belt and a black patent-leather belt; black trousers, brown trousers, gray trousers, plaid trousers and pin-striped trousers; brown shoes, black patent-leather shoes, white patent-leather shoes, and sneakers.
How many different ensembles are possible today if he has already determined that he won't wear any stripes and he will wear everything that is white patent-leather?
A. 288 B. 144 C. 15 D. 16

11. Jethro has just purchased a hamster to be a companion for his gerbil, D.W. He is going to name the hamster by choosing a first name and second name from this list of names: Billy, Bobby, Bubba, Brett. The first name may or may not differ from the second name. How many different two-part names are possible?
A. 8 B. 12 C. 16 D. 64

13. Aristotle is going to register for classes next term. He has to choose one class from each of the following categories:
I. MGF1107, MAC1105, STA1014
II. REL2000, REL2121, REL2213
III. AFH1000, AMH1000, ASH3100, EUH2100
IV. LIT2020, LIT2081, LIT3043
How many different combinations of classes are possible if he has already decided that he will take LIT3043 and he won't take EUH2100 and he won't take REL2000?
A. 108 B. 19 C. 24 D. 18

15. Euclid needs to create a password for his internet account. To simplify things, he is going to form a four-letter password by choosing letters from this set: {A, D, E, M, R, S, T}. How many different passwords are possible if the second and fourth letters will be vowels and the other two letters won't be vowels (repeated letters are possible)?
A. 40 B. 100 C. 256 D. 14